BRITISH FLORAS ANCIENT AND MODERN

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The appearance of the long-awaited new flora of the British Isles[1] seems an appropriate occasion not only to welcome and review the newcomer but also to survey, for fellow members of the Club and other New England botanists, the more noteworthy of the past floras of their ancestral home across the Big Water. From its early days British botany has been endowed with an almost unparalleled concentration of county and other local floras, usually prepared by enthusiastic amateurs and of fair quality. It is not, however, with these that the present notes will in general be concerned but rather with the overall floras of the 'green and pleasant' archipelago.

Nevertheless what has been called "virtually the first Flora of Britain as a whole" was "primarily a record of botanical tours in England and Wales" that, however, "lists all the British plants (nearly 700) at that time known to" its author, being "intended as a prelude to a full-scale Flora which he unhappily did not live to publish."[2] This author was the cavalier and Oxford Doctor of Medicine Thomas Johnson, who died fighting for King Charles I in 1644, and the work concerned was his "Mercurius Botanicus," published in London in 1634 and, as regards a "pars altera," in 1641.[3] Among other works, Johnson edited a fine revision of Gerard's 'Herball' and, "by his own labours, bridged the gulf between the medical herbalists and the Flora-writers who studied plants for their own sake."[2]

Johnson was soon followed by another Oxford graduate and physician, William How (or Howe), who (apparently, though anonymously[4]) published in London in 1650 the "small alphabetical catalogue"[4] entitled "Phytologia Britannica," which Benjamin Daydon Jackson in his "Guide to the Literature of Botany"[3] twice terms (on pages xxxiv and 231) "the first British flora." How (or Howe) was in turn followed by yet another

[1] Clapham, A. R., T. G. Tutin, and E. F. Warburg, "Flora of the British Isles," *Cambridge, England:* Cambridge University Press, pp. liv + 1591, 1952 (7½" x 5", 50 shillings; or $9.50).

[2] Anon., editorial "On Floras," *Endeavour*, vol. **11**, no. 43, pp. 115–116, 1952.

[3] Jackson, B. D., "Guide to the Literature of Botany," *London:* Longmans, Green, pp. xl + 626, 1881.

[4] Raven, C. E., "John Ray, Naturalist: his life and works," *Cambridge, England:* Cambridge University Press, pp. xix + 502, 1942.

Oxford graduate and physician in Dr. Christopher Merrett (or Merret), whose "Pinax Rerum Naturalium Britannicarum," issued in London in 1666, also constituted a British flora of sorts, and ran into a second edition the following year.

However, even ardent Oxonians must accord a far greater place in British botany to the Cantabrigian John Ray, who, contending that "the world is glutted with Dr. Merrett's bungling *Pinax*,"[2] published in London in 1670 his "Catalogus Plantarum Angliae, et Insularum Adjacentium," of which a second edition was issued in 1677. The Cantabrigian authors of the new "Flora of the British Isles"[1] contend (p. xi) that this work of Ray's was "the first attempt at a true flora of these islands." As none of the works in question is currently available to me, I cannot express an opinion but only recall the contrary indications cited above: presumably, like so many other controversial matters, it is a question of definition (in this case, what precisely is a flora). However this may be, there can remain no serious question that with his "Catalogus" and supplementary "Fasciculus Stirpium Britannicarum" (London 1688) and subsequent "Synopsis Methodica Stirpium Britannicarum," which was first published in London in 1690 and ran into a second edition in 1696 and a third (recast and edited by the Oxonian Dillenius) in 1724, Ray was the most eminent and widely followed British systematic botanist of his day and indeed for many years after his death in 1705. Nor were there any other types of scientific botanist in that period or for many decades to come, nor successful attempts at better floras.

Actually, it was not until the all-conquering sexual system of Linnaeus swept the botanical world in the middle of the eighteenth century that Ray's works, with practically all others, were thrown into disuse and became little more than historical curios (though often of a fascinating nature). It is also to Ray's credit that the first attempt at a flora of Britain based on Linnaeus's system was a 'Linnaean' arrangement of the third edition of Ray's "Synopsis": the result was the "Flora Britanica: sive, Synopsis Methodica Stirpium Britanicarum," published in London in 1760 by "that curious individual Sir John Hill . . .

[5] p. 112 of "Further Correspondence of John Ray," edited by R. W. T. Gunther, *London:* Ray Society, pp. xxiv + 332, 1928.

but without altering the old descriptive names,"[3] so that, from the point of view of nomenclature, it has to be considered pre-Linnaean!

However, the first worthy response to the demand for an up-to-date British flora along the new Linnaean lines as regards both system and nomenclature soon came from William Hudson, whose "Flora Anglica," first published in London in 1762, ran into a second edition in 1778 and was further reprinted in 1798. This work quickly ousted Ray's "Synopsis" as the standard scholarly account of British plants in general, and had several worthy successors during the period of ascendency of the Linnaean system which lasted well into the nineteenth century. Among the most notable of these was the elder William Withering's "A Botanical Arrangement of all the Vegetables Naturally growing in Great Britain, with descriptions of the genera and species, according to the system of the celebrated Linnaeus," which was first issued in London in 1776 in two volumes, and, as indicated on the title-page, constituted "an attempt to render them familiar with those who are unacquainted with the learned languages," being in fact the first serious flora of Britain written primarily for amateurs. As such it had many successors with which we need not be much concerned; it also enjoyed considerable success that extended over more than a century, being revised again and again under various guises, auspices, forms, and changes of title and authorship until the last edition was published in 1878. (It should here be interjected that, many of the above works, and especially the pre-Linnaean ones, not being at the time of writing available to me, I had to rely in the main on published accounts and catalogues or my own old notes, though fortunately I was able to check most of the points and outstanding references during a subsequent visit to Oxford, England, others being kindly verified by my former pupil Dr. John Burnett, Fellow of Magdalen College, while Dr. E. F. Warburg read and generously approved the manuscript apart from a few very minor alterations which I was happy to make.)

Sir J. E. Smith and James Sowerby's "English Botany," written by the former and beautifully illustrated with no less than 2592 colored plates by the latter, was a more lavish contemporary to those works employing the Linnaean system, its

object being to present for the first time a complete set of colored illustrations of all British plants. The first edition, in 36 volumes, was published in London between 1790 and 1814, after which supplementary parts, prepared by other authors and illustrators, went on appearing until 1866; a second edition, in twelve volumes, was completed in 1846, and a less well illustrated third, but with improved letterpress, edited by John T. Boswell Syme, appeared during 1863–72 (or all dated 1873) in eleven volumes to which a twelfth, on cryptogams and including a general index, was added in 1886, by which time the editor had dropped his last name; further supplementary material appeared later under other auspices.

Meanwhile there had appeared many other general British floras based upon the Linnaean or some reformed sexual system, among which may be noted (1) James Jenkinson's "A Generic and Specific Description of British Plants, translated from the Genera et Species Plantarum of the celebrated Linnaeus" (Kendal 1775) with, however, useful additional locality and other notes, (2) Dr. John Berkenhout's "Vol. II. Comprehending the Vegetable Kingdom" of his "Synopsis of the Natural History of Great-Britain and Ireland," apparently published first in 1770 and running into a "third" edition in 1795, (3) J. Symons's little "Synopsis Plantarum Insulis Britannicis" (London 1798), (4) Dr. John Hull's "The British Flora, or a Linnean Arrangement of British Plants," published in Manchester in 1799, with a second edition in 1808, (5) Sir J. E. Smith's "Flora Britannica" in three volumes (London 1800–04), republished in Zürich in 1804–05 with additional localities, (6) John Galpine's "A Synoptical Compend of British Botany . . . arranged after the Linnean System" which was first published in Salisbury in 1806 and had further editions up to the fourth, published in London in 1834, (7) Dr. R. J. Thornton's "The British Flora . . . arranged after the Reformed Sexual System," published in five volumes with accompanying illustrations (London 1812), (8) Sir J. E. Smith's "The English Flora," of which the original four volumes on vascular plants were published in London during 1824–28, followed by a second edition in 1828–30, and, later, by a fifth volume in two parts (on Fungi by M. J. Berkeley and on the other non-vascular cryptogams by W. J. Hooker), (9) the

last-named's "British Flora" (*see* below), and (10) Dr. Richard Deakin's "Florigraphia Britannica," published in four volumes in London during 1841–48, and of which a new edition appeared in 1857.

Already some decades before these later dates the so-called natural system of classification had begun supplementing the sexual one originally established by Linnaeus. Noteworthy at an early stage was S. F. (no relation) Gray and his son J. E.'s[6] "A Natural Arrangement of British Plants, according to their relations to each other," published in two volumes (of which the second was on vascular plants) in London in 1821 and surprisingly enough not acknowledged in its less weighty successor, Professor John Lindley's "A Synopsis of the British Flora; arranged according to the Natural Orders," which appeared eight years later and of which a second edition was issued, also in London, in 1835, and a third in 1841. This last was reprinted and republished in London in 1859 (by "Longman, Brown, Green, Longmans, & Roberts" according to a copy in the Gray Herbarium, though it is interesting to note that B. D. Jackson, writing in London in 1881 (p. 235) when Secretary of the Linnean Society, was unable to find a copy[3]).

In spite of the undoubted merit of the Grays' and some other works, the general floras which largely guided British field botanists and others interested in the flora of the British Isles for the remainder of the nineteenth century and the first half of the twentieth—indeed until the publication last year of the new 'Cambridge' flora—were due primarily to George Bentham, the Hookers (father W. J. and son J. D.), and C. C. Babington. These remain among the greatest names in British (as often they do in world) botany, and as indeed seems the more right and proper when we recall that to them, still, systematic work comprised practically the whole of plant science. However, Bentham should not be credited with introducing the use of keys to British floras, as he was by his fellow Cantabrigians,[1] for effective ones to the families and genera were employed many years earlier in the works of the Grays and John Lindley cited above, being a rather natural outcome of the change from the Linnaean system, while clear keys to the species appeared in Dr.

[6] cf. *Journal of Botany*, **13** (N. S. 4), p. 127, 1875.

D. C. Macreight's "Manual of British Botany; in which the orders and genera are arranged and described according to the natural system of De Candolle; with a series of analytical tables for the assistance of the student . . . ," published in London as early as 1837.

Happily surviving the change from the Linnaean to the natural systems of classification and cleverly outriding the controversies involved was W. J. Hooker's "The British Flora," of which the first edition was published in London in 1830 and three others appeared within the decade. While these early editions were based upon the Linnaean system, they contained increasingly detailed appendices dealing with the natural system; in such an appendix in editions 3 and 4 "the British Genera are referred to their respective *Natural Orders*." The fifth edition, published in London in 1842, was arranged according to the natural system, after an introduction in which the Linnaean system was used as a kind of index to the natural one, and the subsequent three editions, prepared by Hooker and G. A. W. Arnott, and published in London in 1850, 1855, and 1860, respectively, so well maintained this tradition that according to B. D. Jackson[3] "'Hooker and Arnott' was long the text-book of British field botanists." In view of what has been said above and of the full explanations given in subsequent editions, it scarcely seemed fair for Jackson (*op. cit.* p. 235) to remark that the fifth edition "was altered to the Natural System without the slightest comment thereon," especially as Hooker specifically remarked in his introduction to that edition (p. v) that "The Linnaean Method is . . . preserved, as an easy introduction to a knowledge of the more important or Natural Method." It should be noted that the third, fourth, and fifth editions are indicated as "vol. I," the other volume being made up of the works on non-vascular cryptogams comprising also vol. 5 of Sir J. E. Smith's "The English Flora"—*see* above.

Babington's "Manual of British Botany, containing the flowering plants and ferns arranged according to the natural orders," first appeared in 1843. It was followed by a worthy succession of further editions, in similar format and likewise published in London, by the original author up to the eighth (1881), and then by a ninth (edited by H. and J. Groves) in 1904 and a tenth

(edited by the late A. J. Wilmott) in 1922; this last, in particularly handy pocket size, is still the constant companion of numerous British (and some other) botanists in the field. Meanwhile there appeared its rather larger and less technical rival "for the use of beginners and amateurs," Bentham's "Handbook of the British Flora; a description of the flowering plants and ferns indigenous to, or naturalized in, the British Isles," which was first published in London in 1858, had admirably clear keys to the species, and was followed by further editions up to the fourth, issued in 1878, as well as by an illustrated version in two volumes published in London in 1865. After Bentham's death in 1884, further editions of the now famous "Bentham and Hooker" were revised by J. D. Hooker (up to the seventh, published in London in 1900), and there was even a further "*Seventh Edition* revised by A. B. Rendle" issued as recently as 1924. As a useful companion to what was originally Bentham's "Handbook" there was published in London, after the exhaustion of his illustrated edition, a separate book of "Illustration of the British Flora" by W. H. Fitch and W. G. Smith, commencing with a first edition in 1880 and ending with a fifth in 1901, to which were later added "Further Illustrations of British Plants" by R. W. Butcher and F. E. Strudwick (published in Ashford, Kent, in 1930). The younger Hooker also prepared "The Student's Flora of the British Isles," a useful work with clear descriptions, first published in London in 1870 and followed by further editions in 1878 and 1884; it received wide acclaim for general accuracy and conciseness, and the last edition is still in considerable use today.

Other overall floras etc. of the British Isles issued during the past century in which the natural system has held almost undisputed sway include (1) "The London Catalogue of British Plants," a check-list first prepared supposedly by H. C. Watson and published in 1844, which was subsequently revised and issued in various forms as further editions, latterly by other workers, up to the eleventh which appeared in 1925, and was the most enduring and influential compilation of its particular kind, although worthy early rivals were published in Cambridge and Edinburgh (several editions), and, for once much later, in Oxford, where G. C. Druce's "List of British Plants" appeared in 1908, to be

followed by a second edition (entitled "British Plant List" and published at Abroath) twenty years later, (2) C. A. Johns's classic (but 'popular') "Flowers of the Field," first published in two volumes in London in 1853, which proved so lucid and attractive that no fewer than 29 editions were called for before the end of the nineteenth century, and more appeared in the twentieth, as well as, earlier, a number of editions of Johns's companion work "The Forest Trees of Britain," which first appeared in two volumes in 1849, (3) Robert Hogg and George W. Johnson's "The Wild Flowers of Great Britain," illustrated with fair hand-colored plates and published in London in 9 volumes during 1863–80, (4) W. R. Hayward's "The Botanist's Pocket-Book, containing in a tabulated form the chief characteristics of British Plants," of which the first edition was published in London in 1872, followed by others up to the nineteenth which appeared in 1930 and of which the fourth printing is still being advertised (and used) and, like other recent ones, was revised by the late Dr. G. C. Druce at Oxford, (5) Anne Pratt's "The Flowering Plants and Ferns of Great Britain," with good if often congested colored plates, published in London in five volumes in 1855, of which what seems to have been a third edition was issued in six volumes in London in, apparently, 1873, (6) Frederic N. Williams's partial and unimplemented "Prodromus Florae Britannicae," of which ten parts were published during 1901–12 but apparently no more, (7) Dr. C. E. Moss's also unfortunately abortive "The Cambridge British Flora," of which the lavish if crotchety volumes 2 and 3, on various groups of Apetalae and Polypetalae, appeared in 1914 and 1920, but that was all, (8) A. R. Horwood's ecologically-based, 6-volume work on "British Wild Flowers in their Natural Haunts," published in London apparently in 1919 and usefully illustrated though uncritical and, like some less sumptuous works which have not been cited here, concerned with only chosen examples from the British flora, (9) Dr. G. C. Druce's valuable "The Comital Flora of the British Isles," published at Abroath in 1932, which is still in wide use though needful of revision, (10) such partial floras, omitting many rare or critical species, as various 'school' and 'student's' ones, including C. T. Prime and R. J. Deacock's recent "The Shorter British Flora," published in London in 1948, (11) such 'popular' (though scientifically

based) or special-angle works as L. J. F. Brimble's eminently readable "Flowers in Britain" (London 1944) and "The Floral Year" (London 1949), or Dr. John Hutchinson's "British Flowering Plants: evolution and classification of families and genera, with notes on their distribution," published in London in 1948, and (12) the "Biological Flora of the British Isles," which has been appearing in the *Journal of Ecology* since 1941 and, as "It is hoped that [it] will eventually become a complete account of the biology of all British Flowering Plants, Conifers, and Pteridophytes, including naturalized aliens," seems appropriate for mention here—especially as it has been pushed on energetically and latterly with increasingly happy results—although it is a flora of a very different kind from those previously mentioned, or, for that matter, heretofore seriously attempted.

In addition to the above already very heterogeneous assemblage of more or less overall works on the British vascular flora (purely cryptogamic works have in general been ignored), there have been scores and indeed probably hundreds of others, usually of less weight or significance, besides very many more county and other local florulae. For in the countries of northern Europe, including the British Isles, it is happily common for a considerable proportion of country dwellers with education, and many others with little or none from books, to take a healthy interest in the plants that form so vitally important a part of their environment.

Thus was the stage well set for the production of the new (or, as it seems likely to be called, "Cambridge") "Flora of the British Isles";[1] nor are those who have so long awaited its arrival likely to be disappointed with this work, unless it be in minor connections, some of which will be mentioned below. To begin with the whole is well executed and well produced, and above all was badly needed; for in spite of the numerous forerunners, of one sort or another, mentioned above, the situation is fairly indicated by Professor Sir Arthur Tansley when he opens his lucid foreword by writing "A new British Flora has been a desideratum for the past half century and urgently needed during the last thirty years." Nor can there be any question about the total authority with which the trinity of authors write; for although not all primarily taxonomists they are, to quote again from the fore-

word, men "all with the modern training, all keenly interested in plants as they grow in the field, in ecology and genetics [so that a] comparison of their book with any of the previous Floras will make plain the distance that has been traversed since those were written." Obviously it will become the indispensable field companion of numerous academic and other botanists as well as of newer students and enlightened amateurs (for whom it is primarily intended), and will be thumbed over in herbaria, laboratories, and homes for many years to come.

A comprehensive and reasonably up-to-date flora being an essential tool for the effective study in any area of its different kinds of plants, and economically important because of the dependence of mankind very largely on plants for the wherewithal and amenities of life, it is particularly gratifying to find this flora in some respects as 'modern' as could be desired, indicating chromosome numbers (where known), Raunkiaer life-forms, edaphic and other habitat preferences, with frequent admissions of taxonomic entanglements or even doldrums such as all perceptive students meet but not all so readily admit. The ecological notes are often particularly well and concisely written. Other commendable points are the 'Ekskursionsflora' form and convenient 'pocket' size (though not thickness, which the publishers claim to be 2 inches), waterproof cover (tested by this reviewer) against ordinary rainy days but one still wonders about the effect of the inevitable soakers), decapitalization of all specific and 'lower' epithets (though the repetition in each case of the capitalized form serves no evident purpose and uses valuable space), wide use of subspecies (though some critics have objected to this and one has commented *inter alia* that "*Galium palustre* ssp. *tetraploideum* is surely a case where valour has stolen a march on discretion!"),[7] and the sprinkling of line drawings (though some of these have captions in the wrong places or could be improved in quality, and one looks forward to the promised companion volume of illustrations).

As this book has already been hailed with wide approval, which it richly deserves, it would seem time to indicate, now that its future is assured, some of the more obvious ways in which it seems, at least to this reviewer, that further editions might be

[7] Meikle, R. D., "A new British Flora," *Kew Bulletin*, No. 2 for 1952, pp. 252–254, 1952.

improved. These items are in almost all respects relatively minor, and certainly do not seriously detract from the merit and value of the work as a whole; they are rather of the nature of suggestions (one hopes constructive) which such a worthy effort can well stand, *plus* a few of the grumbles that seem to be inevitably raised against any major work (as none can be perfect for all men!). Some of these have already been indicated above, and more are given in the pithy review of Meikle,[7] who, however, seems to go too far in condemning the text-figures as "generally poor, and sometimes . . . downright misleading. They should be completely revised, or else altogether omitted, in future editions."

It was quite a shock even to the present, distant devotee of the British flora to find in this book, published well on in 1952, no mention whatever of the two most important discoveries of recent years in the flora of the British Isles, namely those of *Koenigia islandica*, a genus new to Britain, and of *Diapensia lapponica*, a family new to Britain: the former was announced in 1950 from material collected in 1934, the latter in 1951,* and both were subsequently confirmed. Each discovery has been the subject of at least two special papers and, in addition, notice in the daily press as well as incidentally in other botanical works: yet they could well remain unknown to the newcomer. Latterly it seems to have become generally agreed that "both are undoubtedly native on remote hills in Scotland."[8] The explanation of this surprising and unexplained omission is obviously that the book was an excessively long time in the press, as is indeed indicated by the references to "Professor A. G." Tansley (he was knighted very early in 1950); but surely the authors owed it to their dependents (for such are indeed hosts of British botanists) at least to insert an *addenda* slip including such items.† Nor are

[8] Lousley, J. E., "The Changing Flora of Britain," *Nature*, **169**, pp. 1076–1079, 1952.

* Also announced in 1951 (e. g. *Nature*, **168**, p. 934) and further in 1952 (*Watsonia*, **2**, pt. 4, p. 237) was the confirmation of *Homogyne alpina* in Scotland, while very recently Sir Christopher Cox, Fellow of New College, Oxford, has added *Artemisia norvegica* to the known British flora—so some blank pages for notes at the back of the next edition of the work under review would seem likely to be welcome! These and some other very recent finds are reviewed by J. E. Lousley in *Nature* (**171**, pp. 335–337. 1953).

† While this review was in proof there was published in *Nature* (**171**, p. 333, 1953) a notice to the effect that "a list of errata so far discovered in the first edition" is available free of charge from the Cambridge University Press, Bentley House, 200 Euston Road, London, N. W. 1, England.

they absolved by dating their acknowledgments "November 1948," as their own bibliography includes later works! In this age when all too many books are liable to be outdated before publication, there is still no scholar's excuse for not maintaining vigilance against such happenings—as is indeed all the more to be expected with key works of reference.

Turning to that bibliography, it is disappointingly slender and, at least for the 'outsider,' inadequate. Particularly striking is the omission of any county or more local floras, in which the British Isles happily abound, and which are rendered little if at all less necessary by the publication of this modern overall work (though the latter may well stimulate local authorities to the preparation of some new and better local floras). Quite apart from their seeming desirability in the bibliography, a brief but critical survey of British local floras would be a valuable addition to future editions if, as evidently is the case, the authors are anxious to give the most possible help to their public. In view of the inclusion of Tansley's monumental "The British Isles and their Vegetation," there is less need for reference to other ecological works, though it should be remembered that the studies of flora and vegetation are scarcely separable, and that the *Journal of Ecology* is now an awfully long series to look through!

While the general editing is on the whole commendably uniform —a charming tribute by the other two authors indicates that this labor, and the main responsibility for the work as a whole, lay with Professor T. G. Tutin—it would not seem ungracious, in view of the authors' own admissions, to express the hope that future editions may be more uniformly critical—with, moreover, at least brief notice of more of the lower intraspecific taxa. Thus whereas the tendency has been to draw family (and sometimes generic) limits very narrowly, which already some users will deplore (especially where it introduces such names as *Chamaepericlymenum* for the familiar *Cornus*, or *Chaenorrhinum, Kickxia*, etc., for *Linaria*), specific lines are apt to be quite evidently (sometimes painfully so) left to individual opinion or some much earlier judgment. In the words of one reviewer,[7] "The fact that the Flora is a product of triumviral ingenuity has perhaps been the cause of . . . inconsistency which will be painful to those who find comfort in the uniformity of a single botanical outlook."

But further study and perhaps closer cooperation in the future should improve this, even as it must remain impossible of complete remedy so long as species continue to be a matter of personal judgment: the message in this case, as in connection with the worst taxonomic tangles, is chiefly one of sympathy!

On the other hand New England botanists who may have seen reviews in which this work was hailed as "Herculean" and "definitive" will smile, knowing that no overall flora can be the latter and, in the former connection, inevitably comparing it with their own maestro's recent solo (though aided by others, as were even Clapham, Tutin, and Warburg) revision of Gray's 'Manual,' which is virtually a new work of the order of three times the length of this one, deals with over 8,000 specific and allied entities, and yet has nearly 2,000 illustrations—which brings us to the specific grumble of cost, as the retail price of the two books in the United States is precisely the same! Although the standard print is smaller in this eighth edition of Gray's 'Manual,' the layout tends to be clearer than in the work at present under consideration, and the important features better emphasized—in the keys as well as in the descriptions, from which a good deal of unimportant detail and repetition is omitted with distinct advantage in Gray's 'Manual.'

As for the generic 'splitting' implied above, this is a matter which, according to most mature taxonomic judgment, should only be perpetrated after extensive study of all involved entities throughout their range. Quite apart from the distressing (except to the combination-mongers) name-changes which such segregation demands, it is remarkable how often groups which are distinct in one geographic area are confluent in another, and whereas with all species such considerations do not seem decisive in view of modern knowledge of biotype content, introgression, and population statistics, one would like to think that with genera they still should be.

In the absence of general agreement among scientists, the order to be followed in such a work is admittedly largely a domestic question, like the security 'screening' of an individual; nevertheless many visitors to the British Isles, overseas students who will inevitably have to use this book, and probably many academic British botanists, will surely wish the authors had

taken this opportunity to break more basically with local tradition in using a sequence of families and major groups at least more in keeping with that to which infinitely more people in the world are now accustomed. But perhaps the present authors are following the practice of the elder Hooker (*see* above), and their switching of the Pteridophyta and Gymnospermae and dropping of the Charales prelude further fundamental changes for the future; or perhaps the fact that they are referred to on the dust-jacket as "editors" should warn the reader not to expect too many enterprising innovations.

The uninitiated should note that the literature citations after the authors of species are to worthwhile and easily-accessible illustrations; otherwise they may sometimes look like references to original publications of combinations by the second author (as on p. 1321). Is it too much to hope that botanists may some day follow their zoological colleagues and get away from the citation of mere combination-making 'authorities,' thereby presumably reducing the combination-mongering which still seems to be indulged in in certain quarters?

The work on the whole seems to be commendably free from misprints and *lapsi calami*, though the seemingly inevitable sprinkling occur, and more attention might perhaps be given in future editions to the choice and bestowal of English names, which certainly have their use among the many (yes, often very worthy!) laymen who are 'put off' by Latin ones. There is also occasional inconsistency in spelling, e. g. of "caespitosus" (regardless of any Linnaean origin). Other tiny items that nevertheless strike the eye include *Erodium cicutarium* (L.) L'Herit. (not simply "L.") and *Arenaria uliginosa* Schleich. in* Lam. & D. C. (not simply "D. C."). This last item recalls the 'International Rules' (and recommendations) with regard to citation of authors, which might well be studied for consistency etc. in many instances for the next edition, though how many of us really follow them anyway! Some of the names used appear also to be in contravention of the Rules, even regardless of the changes voted in 1950 at the Stockholm Congress. A glorious 'howler' is the *Ribes* fruit which is given on page 588 as "globose or ovoid, 10–20 cm." (in diameter?), to which is added (as if in case of incredulity) that it is "more in cultivated forms."

* The use of *apud* was voted down at the Stockholm Congress.

On the whole the extra-British geographical ranges of species are well done, though it might be suggested that with regard to such a unit as Greenland it be either consistently mentioned (when applying) or omitted as a matter of policy (and in that event included, say, with North America). Its present inclusion in many instances and exclusion from many others is apt to make the uninitiated think that exclusion from mention in a particular case means that the plant in question is absent therefrom, whereas this is often not the case (for example among aquatics, *Hippuris vulgaris* is found practically throughout North America, *Sparganium angustifolium* was described therefrom, and three of the British species of *Callitriche* are known to occur in Greenland).

Evidently realizing that it is humanly impossible in preparing a work of this kind to revise a large amount of extra-territorial material (even if it is available) of almost each and every species, and moreover dangerous to rely too widely on unverified literature citations, the authors have wisely been cautious in their indications of geographical range and have at least avoided the worse pitfall of indicating all sorts of 'presence' that has in fact not been authoritatively reported or confirmed. Except for rare or restricted species, indications of ranges within the British Isles are chiefly given by 'lumping' the number of vice-counties in Great Britain (total 112) and Ireland (total 40). In view of the fact that Druce's "Comital Flora" is now over twenty years old and largely outdated, and indeed often more up-to-date and accurate records are available than have been used in the present flora, it is to be wondered whether it would not be possible in future editions of the latter to indicate which vice-counties are involved (or omitted in the case of a nearly 'full house'), as this, with an appropriate map and explanation (which would also be useful additions to future editions), would at once give a good idea of the distribution of each species in the British Isles and, incidentally, stimulate the admirable sport of hunting for 'filling in' in the future. Among distributional errors may be noted the statements that *Geum rivale* is not found in arctic Russia, whereas it occurs well north on Kanin Peninsula,[9] and that *Alchemilla alpina* occurs in Spitsbergen (not Spitzbergen), where it is unlikely ever to be found; a curious one is that on p. 124, where

[9] Andreev, V. N., "Material k flore Severnogo Kanina," *Trav. Mus. Bot. Acad. Sci. U. R. S. S.*, **23**, pp. 147–196, 1931.

Chelidonium majus is indicated as occurring in 17 vice-counties in Great Britain and 60 in Ireland (which has only 40). Druce in the "Comital Flora" already gave 96 in Great Britain and all 40 in Ireland.

These items are all more or less minor and, as has already been emphasized, do not detract from the general merit and value of this book whose publication is a considerable event in European botany. It is merely hoped that when further editions are called for, as they surely will be, consideration of such matters will help in the further striving for perfection. Meanwhile we can consider the problem of a working British flora as solved for the time being, and its future in good hands.—Gray Herbarium of Harvard University, Cambridge, Massachusetts.

ADDITIONS TO THE FLORA OF THE ERIE ARCHIPELAGO (ONTARIO)[1]

Bernard Boivin

Cursory checking of the recently published Flora of the Erie Islands by E. L. Core (1948) has shown that our herbarium contains quite a few additions to the known flora of these islands, particularly of Middle and Pelee Islands. They are listed below, those marked with an asterisk (*) being new to the flora of the Archipelago.

New to the Flora of Pelee Island

Abutilon theophrasti Med., W. Botham, Aug. 1938.
**Acer spicatum* Lam., W. Botham, 1938.
Acnida altissima Riddell, W. Botham, 1938.
**Agrimonia pubescens* Wallr., W. Botham, 1938.
**Ambrosia psilostachya* DC. var. *coronopifolia* (T. & G.) Farw., W. Botham, 1938.
Amphicarpa bracteata (L.) Fern. var. *comosa* (L.) Fern., W. Botham, 1938.
**Anaphalis margaritacea* (L.) C. B. Clarke var. *intercedens* Hara, W. Botham, 1938.
Arabis perstellata E. L. Br. var. *perstellata*, W. Botham, 1938.
**Aster ontarionis* Wieg., W. Botham, 1938.
**Bidens vulgata* Greene, W. Botham, 1938.
Boehmeria cylindrica (L.) Sw., W. Botham, 1938.
Campanula americana L., W. Botham, 1937, Aug., 1938.
Cardamine pensylvanica Muhl., W. Botham, June 6, 1938.

[1] Contribution No. 1211, Division of Botany and Plant Pathology, Science Service, Department of Agriculture, Ottawa, Canada.